IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Original) A fading pitch detection apparatus comprising:

a plurality of demodulators, connected to a shared reception system, each for demodulating a reception signal through each multipath;

a synthesizer for synthesizing signals outputted from the plurality of demodulators with a phase difference in each multipath being maintained; and

a fading pitch detector for detecting a fading pitch based upon an output signal from the synthesizer.

Claim 2 (Original) The fading pitch detection apparatus of claim 1, wherein the fading pitch detection apparatus is designed for a CDMA system, and

wherein the plurality of demodulators is a plurality of despreading devices, connected to the shared reception system, for performing despreading for each multipath.

Claim 3 (Original) The fading pitch detection apparatus of claim 1, wherein the fading pitch detector includes,

an auto-correlation detector for calculating an auto-correlated value of a synthesized output signal from the synthesizer; and

a fading pitch estimation device for calculating the fading pitch based upon a comparison result between the auto-correlated value and a predetermined threshold value.

Claim 4 (Original) The fading pitch detection apparatus of claim 3, wherein the auto-correlated value is based upon a time difference of the synthesized output signal; and

wherein the fading pitch estimation device includes,

a comparator for obtaining a minimum value of the time difference with which the auto-correlated value is less than the threshold value, and

a calculator for calculating the fading pitch based upon the minimum value of the time difference.

Claim 5 (Original) The fading pitch detection apparatus of claim 4, wherein the calculator performs a liner operation.

Claim 6 (Original) The fading pitch detection apparatus of claim 3, further comprising a transforming device for transforming the synthesized output signal from the synthesizer to electric power,

wherein an output signal from the transforming device is inputted to the auto-correlation detector to obtain the fading pitch.

Claim 7 (Currently Amended) A fading pitch detection apparatus, comprising:

a transforming device for transforming an input signal including a fading-based variation to electric power;

an auto-correlation detector for calculating an auto-correlated value of an output signal from the transforming device; and

a fading pitch estimation device for calculating a ~~facing~~ fading pitch based upon a comparison result between the auto-correlated value and a predetermined threshold value.

Claim 8 (Original) The fading pitch detection apparatus of claim 7, wherein the auto-correlated value is based upon a time difference of the output signal from the transforming device, and

wherein the fading pitch estimation device includes,

a comparator for obtaining a minimum value of the time difference with which the auto-correlated value is less than the threshold value, and

a calculator for calculating the fading pitch based upon the minimum value of the time difference.

Claim 9 (Original) A mobile information terminal, comprising the fading pitch detection apparatus of claim 1.

Claim 10 (Original) A mobile information terminal, comprising the fading pitch detection apparatus of claim 7.

Claim 11 (Original) A method for detecting a fading pitch, comprising:

demodulating a reception signal through each multipath by a shared reception system;

synthesizing demodulated signals for each multipath with a phase difference in each multipath being maintained; and

detecting a fading pitch based upon a synthesized output signal.

Claim 12 (Original) A method for detecting a fading pitch, comprising:

transforming an input signal including a fading-based variation to electric power;

calculating an auto-correlated value of an electric power output signal;

comparing the auto-correlated value with a predetermined threshold value; and

calculating a fading pitch based upon a comparison result.